



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/336,126	06/18/1999	ZHIFENG REN	19226/650R55	7291

7590

04/09/2002

MICHAEL L GOLDMAN  
NIXON HARGRAVE DEVANS & DOYLE  
CLINTON SQUARE P O BOX 1051  
ROCHESTER, NY 14603

EXAMINER

MIGGINS, MICHAEL C

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 04/09/2002

17

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-17

**Office Action Summary**

Application No.

09/336,126

Applicant(s)

REN ET AL.

Examiner

Michael C. Miggins

Art Unit

1772

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 9-26, 29-37 and 40-89 is/are pending in the application.
- 4a) Of the above claim(s) 40-77 and 79-86 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-6, 9-26, 29-37, 78 and 87-89 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-86 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

Art Unit: 1772

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of group I in Paper No. 10 is acknowledged. The traversal is on the ground(s) that a search for group I would necessarily encompass a search in group II. This is not found persuasive because it has already been set forth that group I and group II have separate classification hence a search for group I would encompass group II. The claims are not allowable and thus the restriction according to species still applies.

The requirement is still deemed proper and is therefore made FINAL.

2. This application contains claims 40-77, and 79-86 drawn to an invention nonelected with traverse in Paper No. 10. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

## **REJECTIONS WITHDRAWN**

3. The 35 USC 112 rejections previously of record in paper #10, pages 4-5, paragraphs 9-10 have been withdrawn.

## **REJECTIONS REPEATED**

4. All of the prior art rejections including 102 and 103 rejections are repeated for the reasons previously of record in paper #10, pages 5-9, paragraphs 11-15. Applicant's have added the limitation, "...a substrate having a strain point or a melting point

Art Unit: 1772

temperature between about 300 and 700 degrees Celsius..." to claims 1, 21, 37 and 78 which is inherent in the teachings of Ajayan et al. as discussed in paper #10, page 6, paragraph 12. Applicant has added the limitation, "...the catalyst is a metal or metal alloy..." to claim 12 which is taught by Chen (see page 179) since Chen teach the substrate is Nickel which is a catalyst. Applicant has added the limitation, "...the baseplate comprising a substrate and one or more free-standing carbon nanotubes originating and extending outwardly from an outer surface of the substrate..." to claim 78 which is taught by Debe as discussed in paper #10, page 6, paragraph 13.

## NEW REJECTIONS

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. ~~4~~ Claims 87-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ajayan et al. (U.S. Patent No. 5,457,343) in view of Chen et al. (*Chemical Physics Letters*, vol. 272, pgs. 178-182).

Ajayan et al. disclose applicant's invention substantially as claimed. However, Ajayan et al. fail to disclose that the substrate is a catalyst, wherein the substrate includes a substrate layer and a continuous or non-continuous catalyst layer between the substrate layer and the plurality of substantially aligned carbon nanotubes.

Art Unit: 1772

Chen et al. teach the substrate is a catalyst, wherein the substrate includes a substrate layer and a continuous or non-continuous catalyst layer between the substrate layer and the plurality of substantially aligned carbon nanotubes since the substrate of Chen is Ni, a known catalyst (see page 179) in a product for the purpose of providing a product with well-aligned nanotubes.

Therefore it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to have provided a substrate which is a catalyst, wherein the substrate includes a substrate layer and a continuous or non-continuous catalyst layer between the substrate layer and the plurality of substantially aligned carbon nanotubes in the product of Ajayan et al. in order to provide a product with well-aligned nanotubes.

#### **ANSWERS TO APPLICANT'S ARGUMENTS**

7. Applicant's arguments filed 1/15/02 have been carefully considered but are not persuasive.

Applicant has argued that Ajayan do not teach a process for preparing carbon nanotubes and the resulting filled carbon nanotubes in paper #16, pages 4-5. However, applicant claims a product not a process and therefore Ajayan does not need to teach a process in order to read on applicant's claimed product.

Applicant has argued that Ajayan fails to provide any evidence that the glass substrate is one which inherently has a strain point or melting point temperature within the claimed range because different glass compositions will have different

Art Unit: 1772

characteristics. However, Ajayan teaches the use of a glass substrate (31) which is one of the substrates chosen by applicant (see instant specification page 8, lines 3-10) and has not disclosed or claimed any specific glass composition for applicant's invention. Is applicant arguing that the glass substrate disclosed by applicant does not have the claimed strain point and melting point? Additionally, with respect to the claimed physical properties for the substrate, "it is elementary that the mere recitation of a newly discovered function or property, inherently possessed by things in the prior art, does not cause a claim drawn to those things to distinguish over the prior art." *In re Swinehart et al.*, 169 USPQ 226 at 229. Since Ajayan teaches all of applicant's claimed compositional and positional limitations, it is inherent that Ajayan functions in the manner claimed by applicants. The burden is upon the "applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied upon." To date, this burden has not been sustained.

Applicant has argued that Debe does not teach a baseplate having a carbon nanotube. However, Debe does teach a baseplate having a carbon nanotube (see column 7, lines 34-44, column 8, lines 22-43, column 9, lines 1-35, column 14, lines 38-67 and Figs. 3(a-b)).

Applicant's argument with regards to the 103 rejection over Ajayan in view of Chen has been carefully considered. Applicant again argues in paper #16, pages 7-8 that Ajayan does not inherently disclose the claimed strain and melting points. These arguments are addressed above. Applicant argues that Ajayan can not be combined with Chen. In response to applicant's argument that Ajayan and Chen can not be

Art Unit: 1772

combined, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references.

Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The fact that Chen teaches the use of a nickel substrate does not in any way teach away from combining Ajayan and Chen. In fact there is nothing in Chen which would teach away from the combination. There must be a specific teaching against a particular aspect of a reference to constitute a "teaching away". The teaching of the use of two different substrates by Ajayan and Chen is not a "teaching away" when there is no specific teaching in either reference barring the use of a particular substrate.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the


Art Unit: 1772


shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Miggins whose telephone number is (703) 305-0915. The examiner can normally be reached on Monday-Friday; 1:30-10:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pyon Harold can be reached on (703) 308-4251. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

MCM   
April 6, 2002

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1772

4/8/02